

- **Read labels!** Use only as directed.
- In their zeal to control the problem, many gardeners use pesticides at over 20 times the rate farmers do.



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- ## Storm Drains & Public Streets

- ## Unhealthful Discharges or Conditions

- ## Illicit Discharges from Private Property

- City of Long Beach
Department of Planning & Building
(562) 570-6651**

Automotive Maintenance & Car Care

Fresh Concrete & Mortar Application

Horse Owners & Equine Industry

Home Repair & Remodeling

Roadwork & Paving

For additional brochures call:

For more information about storm drain protection call:

**City of Long Beach
Department of Public Works
Bureau of Engineering
Stormwater Management Division
(562) 570-6023**



Homeowners
Gardeners
Landscapers

Ocean Pollution Prevention: It's Up to Us

Long Beach has two drainage systems -- the sewers and the storm drains. The storm drain system was designed to prevent flooding by carrying excess rainwater away from city streets out to the ocean. Because the system contains no filters, it now serves the *unintended* function of carrying urban pollution straight to the ocean.

This pamphlet tells you how to prevent ocean pollution from "stormwater" or "urban runoff."

Rain, industrial and household water mixed with urban pollutants creates stormwater pollution. The pollutants include: oil and other automotive fluids, paint and construction debris, yard and pet wastes, pesticides and litter.

Urban runoff pollution flows to the ocean through the storm drain system -- 395 miles of pipes that take water and debris straight from Long Beach streets to the ocean. Each year millions of gallons of polluted urban runoff enter the ocean untreated, leaving toxic chemicals in our surf and over 4,300 tons of trash on our beaches.

Urban runoff pollution contaminates the ocean, closes beaches, harms aquatic life and increases the risk of inland flooding by clogging gutters and catch basins. Overall, stormwater pollution prevention programs cost the City of Long Beach more than \$12.7 million per year.

These Best Management Practices (BMPs) will ensure a cleaner ocean and city.

Problems

Landscaping and garden maintenance activities can be major contributors to ocean pollution. Soils, yard wastes, overwatering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering the ocean.

Poorly functioning sprinklers and overwatering, for example, waste water and increase the number of pollutants flowing into storm drains.

Fertilizers, pesticides and herbicides are washed off lawns and landscaped areas. These chemicals not only kill garden invaders, they also harm useful insects, poison fish and contaminate ground and ocean water.

Leaves, grass clippings and tree trimmings that are swept or blown into the street and gutter are also ocean polluters. These wastes clog catch basins, increasing the risk of flooding on your street, and carry garden chemicals into the ocean. As they decompose, they also absorb oxygen fish need to survive.

Solutions

① General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Schedule grading and excavation projects for dry weather.
- Use temporary check dams or ditches to divert runoff away from storm drains.
- Prevent erosion by planting fast-growing annual and perennial grasses. These will shield and bind the soil.



② Garden & Lawn Maintenance

- Do not overwater. Conserve water by using irrigation practices such as drip irrigation, soaker hoses, or micro-spray systems.
- In communities with curbside yard waste recycling, leave clippings and pruning waste for pickup in approved containers. Or, take clippings to a landfill that composts yard waste.
- Do not blow or rake leaves into the street, gutter or storm drains.
- Use organic or non-toxic fertilizers.
- Do not overfertilize and do not fertilize near ditches, streams or other water bodies.
- Store pesticides, fertilizers, and other chemicals in a covered area to prevent runoff.



③ Pesticide Alternatives

The "chemicals-only" approach to pest control is only a temporary fix.

A more common-sense approach is needed for a long-term solution. It's called:



Integrated Pest Management

Plan your "IPM" strategy in this order:

A) Physical Controls

- Caulking holes
- Hand picking
- Barriers
- Traps

B) Biological Controls

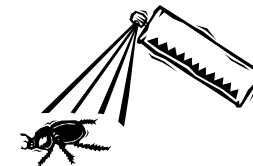
- Predatory insects
e.g. Green lacewings eat aphids
- Bacterial insecticides
e.g. *Bacillus thuringiensis* kills caterpillars



C) Chemical Controls - Your last Resort

Use these least-toxic products:

- Dehydrating dusts (e.g. silica gel)
- Insecticidal soaps
- Boric acid powder
- Horticultural oils
- Pyrethrin-based insecticides



④ Safe Substitutes for Pest Control

Garden Aphids and Mites - Mix 1 tablespoon of liquid soap and 1 cup of vegetable oil. Add 1 teaspoon of this mixture to a cup of water and spray. (Oil may harm vegetable plants in the cabbage family.)

Caterpillars - When caterpillars are eating, apply products containing *Bacillus thuringiensis* to leaves.

Ants - Place boric acid dust or hydramethylnon baits in problem areas, cracks and insect walkways. Be sure it is inaccessible to children and pets (it is a mild poison).



Roaches - Apply boric acid dust to cracks and entry points (see ants above). Place bay leaves on pantry shelves.